INFORMATION PAPER
on
Main eHealth activities outside of the EU

Annex 5
Main Morocco eHealth policies and activities

LIST OF ABBREVIATIONS

ACCRONYM	DEFINITION
AMO	Mandatory Health Insurance Assurance Maladie Obligatoire
BHC	Basic Healthcare Centres
CMIL	Casablanca medical informatics laboratory
CNDP	National Commission for Control of Personal Data Protection Commission nationale de contrôle de la protection des données à caractère personnel
CNIM	National Congress of Medical Informatics Congrès National d'Informatique Médicale
CNOPS	National Provident Organizations Fund Caisse Nationale des Organismes de Prévoyance Sociale
CNSS	National Social Security Fund Caisse Nationale de Sécurité Sociale
ENI	European Neighborhood Instrument
ENP	European Neighborhood Policy
HcP	Healthcare Provider
HP	Health Professional
ICT	Information and communication technologies
IT	Information technology
LMCT	Morocco League against Tuberculosis Ligue Marocaine Contre la Tuberculose
MSfTeH	Moroccan Society for Telemedicine and eHealth
NGO	Non Governmental Organization
RAMED	Medical Assistance Scheme Régime d'Assistance Médicale
SMIMS	Société Marocaine d'Informatique Médicale et Santé Moroccan Medical informatics Association
SMS	Short Message Service
UHC	Universal Health Coverage
UN	United Nations
WHO	World Health Organization

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Preamble

Object

The present document is an Annex to Joint Action to support of the eHealth Network (JAseHN) Deliverable 8.1.4 in WP8 "Report on main eHealth activities outside of the EU". It has been prepared by Norbert Paquel (external, director of Canope cabinet – France) under the control of Michèle Thonnet (Work Package leader-FRNA), then corrected and approved by the sPSC.

The objective of D8.1.4 is to observe the situation in various countries in order to better understand the development factors and main trends in the worldwide movement towards a tighter integration of ICT tools in healthcare but also to be able to initiate cooperation when advisable and possible. To that end, concrete projects have been identified as potentially interesting for eHN Member States (MS) exchanges or cooperation. These opportunities would need deeper analysis, through direct contact with experts, notably local representatives of the concerned MS or participants in EU projects.

Methodology

As explained in the main D8.1.4 document, the research was based on a desk study carried out between 2017/02 and 2017/08. It is important to note that time runs often very fast in the eHealth and mHealth domains. Accordingly, contrary to healthcare organizations and fundamental policies trends, concrete programmes and projects can change rapidly. However, if they correspond to clear needs and sustainable methods, they should not disappear. Moreover, important developments that may have occurred since August 2017 have been taken into account when possible.

Morocco: basic information on the country

These are the characteristics and events that should be kept in mind as they have a decisive influence on rhythm and policies for eHealth development.

At the north-eastern coast of Africa, Morocco is characterized by a rugged mountainous interior, large tracts of desert, and a lengthy coastline along the Atlantic Ocean and Mediterranean Sea. Morocco has a population of over 33.8 million and an area of 446,550 km2 (172,410 sq mi). *[Wikipedia]*

An important characteristic is that, in its history, Morocco maintained an independent state and became for a long period an empire, including North Africa and a large part of Spain. This past has left until today tensions in the Sahara Desert region, with Algeria, Mauritania and independence movements. History brought many population movements. Hence, Moroccan culture is a blend of Arab, indigenous Berber (with their own language), Sub-Saharan African, and European influences. This last one came firstly of Arabs and Jews removed from Spain in 15th century. However, the most important mark has been left by the 1912-1956 colonization by France and for a lesser part Spain.

Another characteristic of Morocco is its democratic kingdom constitution. The king has simultaneously a wide constitutional power and a religious role, as he is the "commander of believers" in a country where Islam is the religion of the majority.

More than other countries in the region, Morocco has preserved much of its social organization and traditional culture. It also has a fundamentally multilingual system, with Arabic, Berber and French, the latter being widely used in scientific and technical domains (in the healthcare system, most professors and many doctors have been students of French Universities).

- I -
Health and Healthcare background

1. Elements on health situation

The sanitary situation of the poor and in the remote areas is bad. Nearly one-third of Moroccans do not have proper sanitation, which puts them at risk for illnesses. Around a tenth of children under five are underweight. However, progresses have been made since 1956 independence. Life expectancy at birth was 47 in 1962 and 71 in 2010, 73/75 in 2015. Infant mortality was reduced from 118 for 1000 live births in 1962 to 22,7/1000 in 2016 (Tunisia 12/1000, Europe less than 4). Maternal mortality has been also reduced from 316/100 000 live births in 1990 to 121 in 2015 (Middle East and North Africa zone has a 90 ratio). [1]

Maternal and neonatal mortality remain a persistent problem, albeit progress in childbirth attendance and a safe motherhood program.

2. Healthcare system

2.1   Organization

[2] The healthcare system is organized with a predominance of the public sector, characterized by free health care services and centralized management. The State performs the functions of financial source, administrator and healthcare provider. The Ministry of Health runs the Basic Healthcare Centres (BHC), Hospitals, National Institutes and Laboratories. The Defense department runs its own hospitals and services and local governments have Municipality health services.

Over the years, a commercial private sector developed in main cities. It is controlled in part by the Government's General Secretary and partially by Professional Council but it functions independently in most cases.

The not-for profit private sector is ruled by the two mutual systems that take care of employees in private companies, the National Social Security Fund (CNSS), and public or related administrations, the National Provident Organizations Fund (CNOPS).

Primary healthcare includes public structures - clinics, urban and rural health centres, local hospitals in rural districts – and private medical offices and infirmaries. The second recourse corresponds to public provincial and prefectural hospitals and private specialized offices and clinics. The third recourse includes regional hospital centres. Fourth recourse is the university hospital centres, one each in Rabat, Casablanca, Fez and Marrakech.

In 2015, the public sector had about 2,626 basic healthcare centres (BHCs), 138 hospitals (97 general hospitals and 37 specialized hospitals), and five University Hospital Centres, totaling 27,350 beds (2006: 25 000). The not-for profit private sector had 1,874 beds. The for-profit sector had 360 units (clinics, dialysis centres, radiologist's office), with 6,156 beds and continues growing rapidly (2006: 269, 5500) .

There is a mobile strategy: a mobile medical team goes periodically to areas far from medical centres, nurses travel to distribute certain medicines, promote wellness, and provide services mostly for chronic diseases.

2.2   Difficulties and challenges

Morocco suffers from a global and constant lack of physicians, paramedical, hospitalization beds, albeit recent efforts.

There were 16 000 physicians in 2006, 19 000 in 2014 – from 0,54/1000 to 0,62/1000 inhabitants). This is very low - Tunisia has 1,65/1000; in Europe it is everywhere more then 3. Similarly, there were in 2009 0,89 nurses and midwives for 1000 inhabitants (Tunisia, 3,3/1000). Density of hospital beds is 1,1/1000 (Tunisia 2,1, Europe more than 6)

The main challenge is the huge difference between the poorest part of the population and upper classes as well as between main cities and rural areas, especially those with low density (mountain, desert). In fact, these factors are correlated, as higher income Moroccans live in the big cities. Accordingly, this is where University Hospitals and specialized centres are located, as well as private clinics and most of the physicians.

The public sector, which is in fact in charge of the poorest and of rural areas (except for University hospitals and Research laboratories), suffers of known difficulties:

- A constant lack of staff, especially in rural areas;

- Lack of autonomy and centralized management;

- Level of direct expense by population (more than 50%);

- Difficult access to healthcare: 11% of population distant from more than 10km of a Basic Healthcare Centre (BHC);

- Insufficient or inexistent coordination between BHCs and Hospitals;

- Lack of indicators and evaluation tools;

- Unsatisfactory management of pharmaceutical products distribution.

General opinion is that the public healthcare system suffered until now of bad management. Government is addressing this problem with new orientation and plans. Objectives are to increase the number of professionals, foster more cooperation between the different components of the system, extend National Mandatory Social Security System, and build more hospitals.

It must be taken into account that the Healthcare System reflects Morocco's history and strong system of social relations, which is also somehow rigid.

2.3 Health insurance and healthcare economy

CNSS and CNOPS assure protection for public and private employees. They are integrated since 2005 in a general mandatory medical insurance scheme (AMO), extended progressively to other categories, like students. A Medical Assistance Scheme (RAMED), financed by national solidarity, allows the underprivileged to receive certain medical services free of charge in the public system. In 2016, AMO protects around 6,1 M people (18% of total), RAMED protects 10,4 M (30;8%). A new system for independent workers will soon be launched.

Main resources for private sector come from direct payment, ensured by private insurance plans that cover the upper classes. In 2010, health expenditure was 6,3% of GDP. Government expense was 25,2% (for public sector); 18,8% came from AMO and RAMED (for public or not-for profit), 53,6% came from direct expenses (private insurances for private sector mainly).

In 2016, 70% of the population goes to public hospitals.

An important orientation towards universal access was included in the new Constitution adopted in 2011: right to universal access and to financial-risk protection (art. 31) and right to access quality health services (art 154) referring to universal health coverage (UHC) as promoted by the World Health Organization.

2.4 A specific activity: medical tourism

Medical tourism has become an important phenomenon. Private investors consider it a key driver of growth for the healthcare market. The lack of quality healthcare in Sub-Saharan Africa has led

people to travel to Morocco for medical treatment, especially specialist care. On the other hand, patients from Europe and the Middle-East come searching for competitive pricing for procedures that are either expensive or not very well covered by medical insurance in their home countries. Medical tourism contributes around 10% of total revenue in some of the multi-specialty clinics in Casablanca.

3. International relations and cooperation

[1] The historic partnership between the European Union and Morocco, has given a new momentum for modernization and democratic transition process. In 1996, the Euro-Mediterranean partnership included social and human affairs. In 2003, the European Neighborhood Policy (ENP) strengthened cooperation. From 2008, Morocco benefits from an advanced status and there is now a EU-Morocco Joint Parliamentary Committee. The advanced status includes a broad economic, financial and social section. Morocco is the first country in the Mediterranean area where a Deep and Comprehensive Free Trade Agreement has been negotiated. In 2014 and 2015, the European Neighborhood Instrument (ENI) of the ENP supported the Moroccan health sector for a total amount of €100M.

Other important relation is with the US with which Morocco has signed a trade agreement.

In the Maghreb and Middle East zone, there are stronger links with Egypt, Jordan and Tunisia.

4. Motivations for selecting Morocco for eHealth study

- EU geographic proximity and advance status for cooperation;
- Great diversity of populations and territories;
- Morocco has maintained social structures and traditions through centuries;
- Ancient and strong relations with European countries (especially France and Spain);
- Strong relations with many countries in Maghreb and Middle East zone.

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Telemedicine and eHealth development

5. Structural difficulties, stable principles and pillars

As seen above, structural factors make eHealth development difficult. They are geographic, with mountainous and desert important zones, cultural, with the necessity to use different languages, with some different structures and scripts (Arab, Berber, French – even Spanish).

The spontaneous consequence is a huge gap between big cities and other zones, and between impoverished population and upper class. Another is the autonomy of local authorities, not coherent with a very centralized administrative system. All these factors are linked together. A perennial problem is the lack of doctors and other healthcare workforce as well as insufficient knowhow in ICT applications.

Due to the geographic structure, development of communication networks is difficult. However, a positive factor is that Moroccans are massively connected: with 20 millions Internet users, Morocco is 27e in a 198 countries ranking. Mobile equipment has reached high level (1,27 per inhabitant in 2015 – 1,19 in Europ3, 1,13 in North Africa and Middle East).

One stable principle has been to try and develop more coherence in development of ICT tools and particularly in the public system, with the objective, once this coherence obtained, to cooperate with private stakeholders.

The other principle has been to concentrate national effort on the very difficult objective of universal access and equity – for poor and/or isolated populations. In particular to concentrate on the key problem of mother and child assistance, information and empowerment.

Hence, the main target group has been identified as Nurses, as their role is key in rural areas.

6. Key actors' role: developing the foundations
[3] [4] [10] [11] [13]

6.1   Public administration and services

- **The Ministry: national policy and regulation**

The Moroccan Government has studied the development of an eHealth policy (no telemedicine) since 2004. It was partially implemented in public structures.

- A National ICT procurement policy for health sector started in 2003.

- Government carefully maintains multiculturalism and multilingual approach.

- A law was promulgated in 2009 to guarantee security and privacy (see infra).

- ICT training for students in health sciences at public tertiary institutions, development of continuing education in ICT for health professionals.

- **The National Commission for Control of Personal Data Protection (CNDP)**

[5] [6] "Dahir n°1-09-15 of February 2009" established the fundamental rules for personal data protection. It addressed explicitly and specifically Medical Data. The Law created the National Commission for Control of Personal Data Protection (CNDP) and defines Personal data and Sensitive data, these including physical and mental health as well as genetic data. Health data imply more rigorous requirements. The CNDP members are personalities appointed by the King on proposals of the Government and the Parliament.

For a scientific project, it is mandatory to present protocol, precise information on the project manager, ethical committee advice, commitment to encrypt data, categories of people authorized to use the data.

Special exemptions are envisioned for Preventive Medicine, Medical diagnostic, Administration of care, Health service management.

For eHealth, the CNDP considered two situations: implementing information system and eHealth project. The CNDP wanted promoters to precise human and technical means to ensure security, data safety and privacy. The CNDP concentrated on Web technology and published a website compliance guide

6.2   Foreign actors

Many projects are independently led by multi-operators groups, with mainly foreign actors as associations, NGOs and companies, often in association with public or not-for-profit Moroccan actors *(see examples in 7).*

6.3   2009: Moroccan Medical Informatics Association (SMIMS)

[7] Development of Medical IT systems started in University Hospitals. In 1997, the School of Medicine of Casablanca created a first medical informatics laboratory (CMIL), following Health IT projects in the School of Rabat. In 2009, the SMIMS was created. In April 2012, the first National Congress of Medical Informatics (CNIM) was organized.

At that time, however, students interested in health informatics had to study abroad, mainly in France. Only CMIL provided courses in "community health". CMIL was also responsible for a residency program for physicians interested in the medical informatics specialty. Then training courses have been organized for other HPs. [Education and training of nurses, in particular, are ensured by public institutes and private schools under public tutelage – in 2016, they do provide IT training]

CMIL has been involved in international programmes:

-      International NetAdded Project (2007-2009 / European Community) - New technologies to avoid digital division in e-divided areas, through hybrid satellite-wireless technologies; necessity of easy to deploy and robust telecom infrastructure solutions.

-      International EMISPHER Project (Euro-Mediterranean Internet-Satellite Platform for Health, Education and Research) co-funded by the European Commission in the frame of the program EUMEDIS (1999).

-      Another project involves the setup of a remote clinic that is completely dependent on telemedicine to operate.

6.4   2011: Moroccan Society for Telemedicine and eHealth (MSfTeH)

[8] The Society was founded on July 2011 by members from various fields: Medical Doctors, Pharmacists, Engineers, Biologists, Bioinformaticians, Computer Scientists, Lawyers.

The objective of MSfTeH is to contribute to the development of Telemedicine and eHealth, notably by supporting and replicating pilot programmes. Particular focus is on disadvantaged people, especially in rural areas. The Society wants to involve the private sector in harmonization of eHealth standards and interoperability and to establish Guidelines and Principles in the implementation of Telemedicine and eHealth, as well as to promote remote learning in Morocco and. The MSfTeH also creates strategic partnerships with national governmental and non-governmental organizations.

In 2016, MSfTeH members' running projects and interests include implementation of Open Source in Medical Information Systems, establishing medical images databases, managing EHRs.

7. A situation still to be improved

[3] [4] [13] ÒThrough experiments and progresses and albeit appetite of the Moroccans for mobile phones and for the Internet, the development of eHealth and telemedicine are still in infancy and the above mentioned challenges remain. Some important factors and efforts are mobilized by the government. They are often associated with international cooperation and relations.

7.1 Public programmes: developing harmonized data

International programmes provide an important stimulus, especially in the fields of maternity and of international control of communicable diseases. In collaboration with WHO and UN, Morocco is a member of sanitary surveillance networks . The Ministry has itself developed a national system for pharmaco-vigilance, now in a digitization phase, associated with organization changes. In all programmes, evaluations have emphasized the necessity of a profound reform so as to move from an epidemiologic fragmented monitoring towards a coherent health observation.

Accordingly, the Ministry is preparing a network of actors linked through ICT. Data will be concentrated from local centres, go through regional validation and then be transferred at national level. SMS could be exchanged with local centres for alerts; information portals should be connected to world alert networks for medical threats.

7.2 Telemedicine and eLearning still experimental

Examples show the role of University Hospitals and of international relations, also of cooperation between multiple public and private actors.

eLearning had been developed for teaching health science and training health professionals Developers and demand existed but obstacles were inadequate infrastructure, lack of policy framework, perceived cost. Distance learning tools are tested in Fes School of Medicine between operating room and courses room. A pilot project on Tele mammography is conducted between Oncology National Institute in Rabat and Brussels Bordet Institute [12°. eLearning relations are established between the Child Hospital of Washington DC and the Child hospital of Rabat.

Telemedicine tools can be used for sharing medical activities for tele-training: Moroccan surgeons can see a surgery in Belgium and ask for information (between Rabat University Hospital IBN-Sina and Belgium Bonheiden).

Cooperation is also developed for training of sub-Saharan students – ex: courses for Burkinabe students from Moroccan University.

Following paragraphs show some notable experiments that concern national health programs, with public and private partners.

- In the important maternity domain, a telemedicine experiment is set up with the international association "Save the mothers". It is done with a Mobile Ultrasound Patrol, using portable ultrasound system, a smartphone or tablet and a 3G key. Gynecologists in main cities analyze images and identify high-risk pregnancies. The project involves American firm Qualcomm and partners in three villages.

- Same type of operation is set in place for glaucoma with mobile equipment operated by specially trained technicians.

- Reinforcement of supervision of patients with tuberculosis (a persistent health problem in Morocco). A pilot experiment associates GCI Health (private US healthcare

communication Agency), Korean cooperation Agency with the Morocco League against Tuberculosis (LMCT)

- Medtrucks [9], a French company, develops also mobile solutions, with French and Moroccans partners. Medtruck is testing a medical caravan which brings dialysis to patients with kidney disease in remote rural areas. Equipment is second hand reconditioned. Medtruck develops also a geo-localization platform to collect information on medically deserted areas and their inhabitants. These data should be useful for basic health centres aiming to extend their role towards these areas.

7.3 Hospitals organization and new tools

The development of Hospitals Information Systems is still low, but new mHealth applications can be very useful for patients, professionals and hospital managers. This is the case for the Rendez-vous app, which connects patients or HPs to all public hospitals through mobile phone and the Internet.

7.4 Public Information

A public information system is under development. Already, first open bases have been installed: information on medicinal products, AMO (insurance) system data, list of establishments and health centres.

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Main conclusions

8. eHealth in a connected society with a fragile healthcare system

Morocco is a dynamic actor on the international scene, even for telemedicine and eLearning. Unfortunately, social, economic and geographic characteristics hamper the development of eHealth and Telemedicine and in general the communication inside the Healthcare system. The new constitution in 2011 and national plans in 2014-2015 have opened new possibilities. The government and many stakeholders have understood that eHealth and Telemedicine were key tools to start approaching Universal access but it is still a huge challenge. Institutions, local authorities, HPs and citizens are not fully conscious of this opportunity, except in more educated social groups, University hospitals and more and more public hospitals. This is probably what is the most important: break traditional rigidity and foster interest and demand from HPs and citizens.

9. Good practices

Moroccan governments and public healthcare authorities have maintained a constant objective: progression towards universal access for disadvantaged populations and areas, focusing even more on Mother and Infant difficulties, with emphasis of the role of nurses and mobile teams. This gives a basis for eHealth and mHealth Telemedicine and Tele-information.

Development of scientific societies for ICT in Health and for Telemedicine and eHealth is also important.

The other perennial trend is the international openness, which is impressive, with integration in many international programmes, experiments and exchanges with foreign partners, intermediary platform between industrial countries and especially European ones on one side and North Africa, Middle-East and Sub-Saharan Africa zones on the other.

- IV -
Potential for cooperation

10. Main domains and axes for exchanges and cooperation

Morocco is an important potential partner. The risk, in srelation with Morocco, should be to let market forces play the dominant role, as they could contribute to increase, in fact, the huge gap between upper class – and rich foreigners – and the disadvantaged, between main cities and the rest of the country. On the contrary, they can bring resources if the dominant force in international cooperation is development of plans for universal access and general population health.

Moreover, starting later, Moroccan actors can show the way to create social networks and relations in medically deserted areas and for new mobile applications.

Strategic opportunities

- **Fully exploit EU-Morocco relations**

Opportunities can be identified in the European Neighborhood Action Plan 2013-2017 and ongoing present Advance Status agreements: education and professional training, interregional disparities, ICT (in particular, integration in public administration, making closer the Moroccan standardization policy and European Interoperability Framework, Research and High education, and of course Health itself, notably with extension of Social security and protection (AMO, RAMED), cooperation for sanitary vigilance, diseases control.

- **International relations**

As noted before, Morocco is a potential intermediary platform for creating Telemedicine and eHealth services and exchanges with North Africa, Middle-East, Sub-Saharan Africa. Cooperation with Morocco and help to develop digital networks and services should be explored by eHN MS.

- **Support and exchanges with Scientific Societies**

Conferences and seminars, regular social networks groups, with SMIMS and MSfTeH

11. Programmes and projects

The following paragraphs use basic elements of the provisional grid described in the D8.1.4 main document (II – 12.3). There are four categories:

- Learn: the project is a rich source of information for a country confronted to similar problems or working in a similar international action

- Mutual enrichment: development of exchanges between project actors and concerned parties among eHN MS, active in similar projects in their country or abroad.

- Help and support: which can be technical, promotion, financing.

- Participation: co-construction of the project and similar ones.

(at this stage, dates indicated are approximate, as the project goes from idea to pilot to deployment – few mature projects have been observed)

11.1 Universal Access through Telemedicine

Telemedicine and mHealth experiment "Save the mothers" - 2017 - mobile patrol for detecting high risk pregnancy *(see 7.2)*

> Objective for following
> Learn: a key problem in developing countries

Medtrucks - 2017 – dialysis medical caravan, geolocalization platform for desert or mountainous regions *(7.2)*

> Objective for following
> Learn, perhaps Help and Support: for actions in all developing countries

El Jadida region - 2016 – Teleradiology experiment between El Jadida hospital with small towns. *(7.2)*

> Objective for following
> Learn and perhaps Help: see regional organization, at least results of the experiment

Supervision of patients with tuberculosis – 2017 *(7.2)*

> Objective for following
> Mutual enrichment, Help and support: for developing countries but also for industrialized countries transplantation tuberculosis in recently immigrated populations

Ophtalmology – glaucoma surveillance - 2017 *(7.2)*

> Objective for following
> Mutual enrichment: problem and solutions are everywhere in rural, mountainous, desert areas

Remote clinic dependent of Telemedicine - 2017 – 2017 CMIL project *(6.3)*

> Objective for following
> Learn: first find out what has been the realization of this study or experiment

11.2 Other Telemedicine usage

Pilot project Oncology – Telemammography – Rabat-Bordet (Bruxelles) – 2017 *(7.2)*

> Objective for following
> Learn: observe difficulties, problems for the next envisioned phase (extension to smaller hospitals through the Rabat platform.

11.3   Education, training, eLearning

Fes school – operating room to courses – 2017 *(7.2)*

> Objective for following
> Mutual exchange: with eHN MS havaing installed such liaisons

ICT education and training for medical doctors and other HPs from University Hospital – first developments since around 2000 *(7.2)*

> Objective for following
> Learn (first) and if possible participation is specific modules or solutions: It is a difficult task everywhere, with different situations according to the countries and workforce education level.

Telemedicine tools for tele-training – 2017 Rabat surgeons/surgery in Belgium Bonheiden *(7.2)*

> Objective for following
> Learn: information on the study and pilot, difficulties, surgeons appropriation

Courses for Burkinabe students from Moroccan University – around 2016 – *(7.2)*

> Objective for following
> Learn and perhaps Participate: this was a project – see students position, impact, development

11.4   Organization and information in public services

Personal Data Protection - 2009 *(6.2)*

> Objective for following
> Learn and Mutual exchange (certainly intense now): the CNDP is in relation with the European Agencies in charge of a difficult and evolving challenge, due to new applications, networks and tools

Public information open bases - 2017 *(7.4)*

> Objective for following
> Mutual enrichment and Aid: developers of such systems have a growing and rich experience in all countries

Procurement in Health sector- 2003 *(6.1)*

<div align="center">Objective for following</div>

Mutual enrichment: application, impact and link with Free Trade agreement with the EU

Rendez-vous - 2016 *(7.3)*

<div align="center">Objective for following</div>

Learn and perhaps Help and Support: this is a challenge everywhere and this application seems efficient and has received prizes

11.5   Data for surveillance and alerts - 2017 *(7.1)*

<div align="center">Objective for following</div>

Help and support, and Mutual enrichment: indeed this is a key national and international problem

11.6   Pharmaco-vigilance - 2017 *(7.1)*

<div align="center">Objective for following</div>

Help and support, and Mutual enrichment: a general challenge to be studied with the European Medicines Agency and with Health Systems authorities in countries

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